State of California AIR RESOURCES BOARD

EXECUTIVE ORDER A-108-13

Relating to Certification of New Heavy-Duty Motor Vehicle Engines

DEERE POWER SYSTEMS GROUP OF DEERE & COMPANY

Pursuant to the authority vested in the Air Resources Board by Sections 43100, 43102 and 43103 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-9;

IT IS ORDERED AND RESOLVED: That the following Deere Power Systems Group of Deere & Company 1998 model diesel engines are certified for use in motor vehicles with a manufacturer's gross vehicle weight rating (GVWR) over 14,000 pounds:

Fuel Type: Compressed Natural Gas (CNG)

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| Engine Family | <u>Liters</u> | (Cubic Inches) | Exhaust Emission Control Systems and Special Features |
|--------------------------|---------------|----------------|---|
| WJDXH08.1001 (450CNG) | 8.1 | 497 | Engine Control Module Turbocharger Charge Air Cooler Oxygen Sensor |

Engine models and codes are listed on attachments.

The following are the certification exhaust emission standards for this engine family in grams per brake-horsepower-hour:

| Non-Methane | Carbon | Nitrogen | <u>Particulates</u> | |
|--------------|-----------------|---------------|---------------------|--|
| Hydrocarbons | <u>Monoxide</u> | <u>Oxides</u> | | |
| 1.2 | 15.5 | 4.0 | 0.10 | |

The following are the certification exhaust emission values for this engine family in grams per brake-horsepower-hour:

| Non-Methane Carbon Hydrocarbons Monoxide | | Nitrogen <u>Oxides</u> | <u>Particulates</u> |
|---|-----|---------------------------|---------------------|
| 0.4 | 2.2 | 2.6 | 0.05 |

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the materials to demonstrate certification compliance with the Board's emission control system warranty provisions (Title 13, California Code of Regulations, Section 2035 et seq.).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

The Bureau of Automotive Repair will be notified by copy of this order and attachments.

Executed at El Monte, California this _

R. B. Summerfield, Chief

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Mobile Source Operations Division

LARGE ENGINE MODE SUMMARY

Process Code: New Submission

| | | 9.Emission Control | (lbs/hr) @peak torque Device rei Shr Shr | ECM, TC, CAC, A | |
|--|---|--------------------|---|--------------------------------|--------------------------|
| | | 8.Fuel Rate: | (lbs/hr) @peak torque | 64@1350 | 61@1350 |
| sion | 450CNG | 7.Fuel Hate: | torque | | |
| Process Code: New Submission | Manufacturer Family Name: | A Torone @ RPM | | 800@1350 | 745@1350 |
| Process Code: | Manufacturer | 5.Fuel Rate: | n/stroke @ peak HP (lbs/hr) @ peak HP (for diesel only) (for diesels only) | 000000 | 84@2200 |
| Manufacturer: Deere Power Systems Group of Deere & | | 4.Fuel Rate: | mm/stroke @ peak HP (lbs/hr) @ peak HP (lor diesel only) (for diesels only) | (SO) | |
| | Company EPA Engine Family: WJDXH08.1001 | 1001. | 3.BHP@RPM | (SAE GIUSS) | 250@2200 250@2200 |
| | | only: WJDAHUO | | 1. Engine Code 2. Engine Model | |
| Manufacturer: L | | EPA Engine Fan | | 1.Engine Code | 6081HFN01A 6081HFN01B |
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